



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/728,907

12/08/2003

Kerry Alan DelVecchio

08350.2676

9306

58982

7590

09/12/2006

CATERPILLAR/FINNEGAN, HENDERSON, L.L.P.
901 New York Avenue, NW
WASHINGTON, DC 20001-4413

EXAMINER

BERTHEAUD, PETER JOHN

ART UNIT

PAPER NUMBER

3746

DATE MAILED: 09/12/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/728,907

Applicant(s)

DELVECCHIO ET AL.

Examiner

Peter J. Bertheaud

Art Unit

3746

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 December 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 August 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>12/8/2003</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Objections

1. Claim 17 is objected to because of the following informalities: in line 3, the phrase "the third threaded portion" should be changed to "a third threaded portion" because the third portion is not previously referred to in claim 12 or 13, the claims from which claim 17 depends. Appropriate correction is required.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 2, 4-6, 8-12, 13, 15, and 17-21 are rejected under 35 U.S.C. 102(b) as being anticipated by Svihla (U.S. Patent No. 6,364,634).

Svihla discloses a turbocharger assembly (10) essentially as claimed, comprising: a turbocharger drive having a first threaded portion; and a turbine wheel assembly having a turbine wheel and a second threaded portion adapted to engage the first threaded portion of the turbocharger drive (see col. 3, lines 43-56), wherein the turbine wheel assembly includes a turbine shaft having a first end and a second end, the first end of the turbine shaft having the second threaded portion and the second end of the turbine shaft (62) being connected to

Art Unit: 3746

the turbine wheel (18), wherein the second threaded portion of the turbine wheel assembly has female threads (see col. 3, lines 47-49). Svihla further discloses that the apparatus includes a turbine housing enclosing the turbine wheel assembly (see 34 in Fig. 1), at least one bearing (50) operatively connecting the turbocharger drive to the housing (see Fig. 1) as well as a turbine wheel base (66); and a plurality of turbine blades (18) disposed around the outer periphery of the turbine wheel base. Svihla also discloses that the housing assembly includes: a main housing enclosing the turbocharger drive; a compressor housing (22) enclosing the compressor (20), which is attached to the second end of the turbocharger drive; and a turbine housing enclosing the turbine assembly as well as a shaft (16); and a rotor (12) operably connected to the shaft (see 12 and 16 in Fig. 1). Svihla finally discloses a method of assembling a turbocharger by inserting a turbocharger drive into a main housing, wherein the turbocharger drive includes a first end having a first threaded portion and a second end; engaging a second threaded portion of a turbine wheel assembly with the first threaded portion of the turbocharger drive; and connecting a compressor to the second end of the turbocharger drive (see col. 3, lines 47-56). The method further including: pre-assembling the turbocharger drive before inserting the turbocharger drive into the main housing, wherein pre-assembling the turbocharger drive includes: installing a shaft through a rotor; and balancing the rotor (see col. 4 lines 66-67, col. 5 lines 1-3). The method still further includes attaching a turbine housing (34) to the main housing (14) thereby enclosing the turbine wheel assembly; and attaching a compressor housing (22) to the main

Art Unit: 3746

housing thereby enclosing the compressor (see col. 2, lines 60-65, col. 3, lines 2-5).

The reference thus reads on the claims.

4. Claim 16 is rejected under 35 U.S.C. 102(a) as being anticipated by Tombers (U.S. Patent No. 6,499,969).

Tombers discloses a turbocharger (10), comprising: a housing assembly; a turbocharger drive (152) rotatably disposed in the housing assembly (14), the turbocharger drive including a first end (see Fig. 5, right side) having a first threaded portion and a second end (see Fig. 5, left side); a turbine wheel assembly having a turbine wheel (154) and a second threaded portion adapted to engage the first threaded portion on the turbocharger drive (152); and a compressor (158) connected to the second end of the turbocharger drive, wherein the compressor includes a third threaded portion adapted to engage a fourth threaded portion disposed on the second end of the turbocharger drive (see col. 4, lines 10-17 and Fig 4).

The reference thus reads on the claim.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 3746

6. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Svihla (U.S. Patent No. 6,364,634) as applied above, in view of Nguyen-Dinh (U.S. Patent No. 6,291,086).

Svihla, as applied above, discloses all the limitations substantially as claimed except for the second end of the turbine shaft being inertia welded to the turbine wheel.

Nguyen-Dinh teaches a turbocharger drive assembly including a compressor wheel (2), drive shaft (1), and a turbine wheel (3). Nguyen-Dinh further teaches that the turbine wheel may be inertia welded to the drive shaft (see col. 4, lines 10-19) and that this would be advantageous because it would provide a strong connection between the turbine wheel and the drive shaft.

Therefore it would have been obvious to one skilled in the art at the time of invention to modify the turbine assembly of Svihla by inertia welding the turbine wheel to the drive shaft, as taught by Nguyen-Dinh, in order to obtain a strong connection between the turbine wheel and the drive shaft.

7. Claims 3 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Svihla (U.S. Patent No. 6,364,634) as applied above, in view of Cotton (U.S. Patent No. 4,039,268).

Svihla, as applied above, discloses all the limitations substantially as claimed except for the second threaded portion of the turbine wheel assembly having male threads.

Cotton teaches a turbine rotor assembly including a turbine wheel (1), an educer wheel section (2), and a hub for each (3, 4). Cotton further teaches that

Art Unit: 3746

the turbine wheel has male threads on what would be considered the second threaded portion, according to what is claimed. Cotton teaches that this would be advantageous because the grip on the threads could be adjusted through endwise clamping.

Therefore it would have been obvious to one skilled in the art at the time of invention to modify the turbine wheel of Svihla by making the threads on the turbine wheel male, as taught by Cotton, because having the threads on a projection that protrudes into the shaft provides a stronger connection to the turbine wheel by nature of the projection being integral to the wheel.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. These references are noted in the attached form 892.

9. Applicant is duly reminded that a complete response must satisfy the requirements of 37 C.F. R. 1.111, including: "The reply must present arguments pointing out the specific distinctions believed to render the claims, including any newly presented claims, patentable over any applied references. A general allegation that the claims "define a patentable invention" without specifically pointing out how the language of the claims patentably distinguishes them from the references does not comply with the requirements of this section. Moreover, "The prompt development of a clear Issue requires that the replies of the applicant meet the objections to and rejections of the claims." Applicant should also specifically point out the support for any amendments made to the

Art Unit: 3746


disclosure. See MPEP 2163.06 II(A), MPEP 2163.06 and MPEP 714.02. The "disclosure" includes the claims, the specification and the drawings.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Peter J. Bertheaud whose telephone number is (571) 272-3476. The examiner can normally be reached on M-F 9am - 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Anthony Stashick can be reached on (571) 272-4561. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

PJB
PJB


ANTHONY D. STASHICK
PRIMARY EXAMINER